AMENDMENTS TO THE SPECIFICATION

Please amend the Specification by substituting the text, amended as shown below, for the specified paragraph or section:

For the paragraph beginning on page 2, line9:

C1

Other techniques for optical inspection such as the generation of structure grammar from captured images, tracing of structures to produce a set of primitives for the structure edges, the use of alignment techniques utilizing histograms to compensate for vibration and wobble of the support mechanism, and methods of automatic defect classification are disclosed in co-owned ~~and co-pending~~ U.S. patent ~~application~~ number ~~09/262,603~~ 6,487,307 entitled *System and Method of Optically Inspecting Structures on an Object*, and co-owned ~~and co-pending~~ U.S. patent ~~application~~ number ~~09/338,880~~ 6,292,260 entitled *System and Method of Optically Inspecting Surface Structures on an Object*, both of which are hereby incorporated by reference herein in their entireties.

For the paragraph beginning on page 7, line14:

C2

A ~~color scan~~ camera 20 is mounted above the PCB surface. The ~~color scan~~ camera performs a high speed scan (that is, a sweep or survey) of the PCB surface and utilizes red, green, and blue (RGB) channels to separate the signals of the laser light and the multi-spectrum visual lights. Camera 20 may be, for example, a multi-channel color-scan camera.

For the paragraph beginning on page 8, line 3:

C3

In operation, the green light 14 and the blue light 15 are used to illuminate the entire surface of the PCB. Simultaneously, the two coherent red-light lasers 16 and 17 are used to generate a series of

parallel lines over the surface of the PCB 11. The lasers are mounted at 90 degree positions from each other and generate a grid of perpendicular red lines on the PCB surface. In addition, the lasers are strobed at a predetermined rate, so that both time-multiplexing and color-multiplexing can be used to separate the laser signal from the visual light signals generated by the green light and the blue light. The ~~color scan~~ camera utilizes its red, green, and blue channels to separate the red, green, and blue signals from the various light sources.

C3

For the paragraph beginning on page 8, line 14:

The ~~color scan~~ camera 20 is controlled to point at the same position as one or both of the lasers. Then the camera and the laser are scanned (that is, moved) together over the surface of the PCB and take height readings across the PCB. By using the laser grid lines, the present invention can obtain height information over the entire surface of the PCB in a single high-speed scan. When a laser grid line encounters an object on the surface of the PCB, there is a discontinuity in the laser grid line. The magnitude of the discontinuity is measured in order to determine the height of the object.

C4

For the paragraph beginning on page 9, line 1:

The ~~color scan~~ camera takes a continuous series of exposures as it scans. By controlling the exposure time, the resolution of the height information in the direction of the laser line is controlled. A very short exposure time provides a height reading for a desired point on the surface. A rapid series of short exposures provides a height profile over a region of the surface. For longer exposure times, a series of height measurements may be integrated to provide an average height over the entire surface or a region thereof. By adjusting the

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exposure time to the spacing between parallel lines, height information over an entire area of the object can be rapidly obtained.

For the paragraph beginning on page 9, line 20:

FIG. 3 is a flow chart illustrating the steps of the method of the present invention. At step 41, the PCB 11 to be inspected is positioned on the support mechanism 13. At step 42, the PCB is illuminated with blue visual light, green visual light, and red laser light. At step 43, the ~~color scan~~ camera 20 is aligned with the position of one of the lasers 16 and 17. The ~~color scan~~ camera and the laser are then scanned (that is, moved or directed) together across the surface of the PCB at 44. The ~~color scan~~ camera uses its red, green, and blue channels to separate the signals from the three light sources. The red signal may be further differentiated, as noted above, by strobing the laser and using time-multiplexing to extract the signal. At 45, the signals from the green and blue channels are analyzed using known techniques to obtain two-dimensional information regarding the structure of the component mounted on the PCB. At 46, the signal from the red channel is analyzed using the techniques illustrated in FIG. 2 to obtain height information for the component. As noted above, this information may be utilized to determine a height profile, or the information may be integrated over a period of time at step 47 to obtain an average height value.

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